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THE

AMERICAN

MATHEMATICAL MONTHLY

THE PROMOTION OF COLLEGIATE MATHEMATICS.

By H. E. SLAUGHT, University of Chicago.

At the meeting of the Chicago Section of the American Mathematical Society in April, 1914, there arose an informal discussion with respect to the field of collegiate mathematics. It was pointed out, on the one hand, that the interests of secondary mathematics have been well cared for in recent years both through the organization of effective secondary associations in all parts of the country, and through two representative secondary journals; and, on the other hand, that the interests of research in pure mathematics have been strongly fortified through the activities of the American Mathematical Society and its various publications, through the two research journals published under private university auspices, and through the multiplication of research fellowships at all the great universities.

In contrast to these two important phases of mathematical interests, it was pointed out that between them there is the great intermediate field of collegiate mathematics which so far has had no organized attention. No society is concerned particularly with this field and no journal represents its interests, except in so far as a few individuals have endeavored to do so in connection with the AMERICAN MATHEMATICAL MONTHLY. It was recognized that a large majority of the men and women in the mathematical faculties of the six hundred institutions of college grade in the United States are devoting themselves exclusively to teaching, and that very many even of those whose tastes and desires lie in the lines of research devote a good part of their time to teaching collegiate mathematics.

Furthermore, it appeared that mathematical students in our graduate schools come in large measure from smaller institutions in which the teachers are not members of the American Mathematical Society and have no professional contact with their colleagues in other institutions either by way of scientific investigation of through interchanging ideas on the many important questions still outstanding with respect to the collegiate curriculum in mathematics.

And, finally, it appeared that very many even within the present Society, and

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certainly many outside, who might be desirous of engaging in mathematical activities, either in the beginnings of research or by contributing to the betterment of teaching, find themselves practically debarred from all opportunity either because the rungs of the research ladder are all placed high above their reach, with no gradual approaches, or because there is at present no forum in which discussions of collegiate mathematics are welcome.

This informal discussion, which took place at the Chicago Section dinner, led to the appointment, at the later business meeting, of a committee of the Section to consider whether it might be desirable to request the Council of the Society to deliberate upon the questions thus raised. This committee reported at the December, 1914, meeting of the Chicago Section, and upon its recommendation a resolution was passed and transmitted to the Council requesting the Council to consider the feasibility of conducting, under the auspices of the American Mathematical Society, a journal for the field now covered by the MONTHLY.

Upon the presentation of this resolution at the meeting of the Council a committee of five was appointed to report to the Council. The report of this Committee was discussed at length by the Council at the unusually large and representative meeting in New York in April, 1915, and finally the following resolution was passed with only two or three dissenting votes:

"It is deemed unwise for the American Mathematical Society to enter into the activities of the special field now covered by the AMERICAN MATHEMATICAL MONTHLY; but the Council desires to express its realization of the importance of the work in this field and its value to mathematical science, and to say that should an organization be formed to deal specifically with this work, the Society would entertain toward such an organization only feelings of hearty good will and encouragement."

While some members of the Council committee and some others in the Society feel that the Society might well broaden its scope of activity along the lines suggested and thus maintain its sphere of influence throughout the entire mathematical field, yet the decision of the Council was so emphatic as to leave no room for doubt concerning the present policy of the Society, both as to its own attitude toward the field of activity in question and as to the desirability of having this field provided for by an organization formed to deal specifically with this work.

Accordingly, in order to ascertain how large a number of persons engaged in teaching collegiate mathematics, or otherwise related to this field, would be sufficiently interested in forming such a new society to sign their names to a call for an organization meeting, a statement was sent out in June, 1915, explaining the situation and enclosing a reply postal. Approximately 350 replies have been received, of which only about six or seven express some form of disapproval. The communication doubtless reached some institutions after the beginning of the summer vacation and hence it is possible that some additional replies may be received this fall:

It is proposed to send out the notice early in December with the names of all signers received up to that time. The meeting will be called at Columbus, Ohio, in connection with the holiday convocation of the American Association for the Advancement of Science. The name of the new society, its precise character and policy, its relation to the AMERICAN MATHEMATICAL MONTHLY, etc., will be questions for full discussion and determination at the organization meeting.

It should be clearly understood that this whole movement is a matter of public concern, and is in no sense a private undertaking; nor is it an effort on the part of those interested in the MONTHLY to rescue it from impending bankruptcy. The MONTHLY is in sound financial condition and is seeking no rescue measures. Its friends and supporters are interested in this new movement for the same reasons which actuate the rest of the signers to the call for the organization meeting; namely, a sincere desire to promote the course of mathematics in this country in all its many and varied aspects, and especially in that field that has been so greatly neglected,—the field of collegiate mathematics.

HISTORY OF ZENO'S ARGUMENTS ON MOTION:

PHASES IN THE DEVELOPMENT OF THE THEORY OF LIMITS.

By FLORIAN CAJORI, Colorado College.

IX.

E. POST-CANTORIAN DISSENSIONS.

Very frank and brilliant in its mode of exposition but perhaps lacking the originality and depth of the writings of Dedekind and Georg Cantor is the *Allgemeine Functionentheorie* of Paul du Bois-Reymond, Tübingen, 1882. This book, which is contemporaneous with Cantor's creation, discusses the philosophy and theory of the fundamental concepts of quantity, limit, argument, function. He declares that the difficulties surrounding the idea of a limit are not mathematical in character but have their roots in the "simplest parts of our thinking, our conceptions or images" (Vorstellungen). He says that there are two conceptions, those of the idealist and those of the empiricist, "which have equal right to count as fundamental views of rigorous science,"[1] for neither yields contradictory results, at least in pure mathematics. The author presents both sides "with equal rigor," and does not award victory to either. The idealist defends the existence not only of what can be imagined, but also of things unimaginable;[2] he assumes a transcendental attitude. Accordingly he assumes the termination of series, such as those given by endless decimal fractions, which are really "given"

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[1] Paul du Bois-Reymond, *Die Allg. Functionentheorie*, Tübingen, 1882, p. 2.

[2] P. du Bois-Reymond, *op. cit.*, pp. 110, 111.